CLAIMS:

1. A long half-life derivative of an OB protein retaining a biological property of a native OB protein.

2. The long half-life derivative of claim 1 capable of reducing body weight and/or food intake in an individual treated.

3. The derivative of claim 1 which is a derivative of a native human OB protein.

4. The derivative of claim 1 which is an OB-immunoglobulin chimera.

5. The derivative of claim 1 which is a native OB protein or an OB-immunoglobulin chimera modified with a nonproteinaceous polymer.

6. The derivative of claim 4 wherein the nonproteinaceous polymer is polyethylene glycol (PEG).

7. A composition for the treatment of a condition associated with the abnormal expression or function of the OB gene, or for eliciting a biological response mediated by an OB receptor, comprising an effective amount of an OB derivative of claim 1.

8. The composition of claim 7 effective for weight and/or appetite reduction.

9. The composition of claim 7 effective in the reduction of elevated insulin levels.

10. A method for the treatment of a condition associated with the abnormal expression or function of the OB gene, or for eliciting a biological response mediated by an OB receptor, comprising administering to an individual to be treated a derivative of claim 1.

11. The method of claim 10 wherein the condition to be treated is selected from the group consisting of obesity, bulemia, and Type I or II diabetes.

12. A method for inducing weight loss or appetite loss is a subject, comprising administering to said subject an effective amount of a derivative of claim 1.

13. A chimeric polypeptide comprising an OB protein amino acid sequence capable of binding to a native OB receptor, linked to an immunoglobulin sequence.

14. The chimeric polypeptide of claim 13 wherein said immunoglobulin sequence is a constant domain sequence.

15. The chimeric polypeptide of claim 14 wherein said OB protein is human.

16. The chimeric polypeptide of claim 15 wherein two OB polypeptide-IgG heavy chain fusions are linked to each other by at least one disulfide bond to yield a homodimeric immunoglobulin-like structure.

17. The chimeric polypeptide of claim 16 wherein at least one of said OB polypeptide-IgG heavy chain fusions is associated with an immunoglobulin light chain.

18. An isolated nucleic acid sequence encoding an OB protein-immunoglobulin fusion.

19. A replicable expression vector comprising the nucleic acid of claim 18.

20. A host cell transformed wih the replicable expression vector of claim 19.

21. A process comprising culturing the host cells of claim 16 so as to express the nucleic acid encoding an OB protein-immunoglobulin fusion.

22. The process of claim 21 wherein said host cells are cotransformed with nucleic acid encoding at least two OB protein-immunoglobulin fusions.

23. The process of claim 22 wherein said cells are further transformed with nucleic acid encoding at least one immunoglobulin light chain.

24. A method of treating a condition associated with the abnormal expression or function of the OB gene or for eliciting a biological response mediated by an OB receptor comprising administering to a patient a therapeutically effective amount of the chimeric polypeptide of claim 13.

25. The method of claim 24 wherein said condition is selected from the group consisting of obesity, bulemia and type I or II diabetes.

26. A composition for the treatment of obesity comprising an effective amount of a chimeric polypeptide of claim 13 in association with a pharmaceutically acceptable carrier.

27. A method for inducing the growth of cells expressing an OB receptor comprising contacting said cells with the OB derivative of claim 1.